

36

10 in Alodyn

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	<b>21024</b>
<b>Description:</b> Crosstube Extrusion ( 412 Aft )	<b>Part Number:</b>	<b>D6009-129</b>
<b>Drawing:</b> D6009 Rev. A	<b>Qty:</b>	<b>14 12</b>

Step	Location	Procedure	By	Date	qty
1	EXPEDITING	Open W/O	48	04.06.09	12
2	PURCHASING	Issue P/O: <u>2600521</u> a) Order as per Dwg D6009 b) Material: 3.500 x 0.625 wall 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) seamless alum tube c) Minimum ultimate tensile strength = 77 ksi d) Minimum tensile yield strength = 66 ksi e) Tolerance are per ASTM B210 (see details on Dwg D6009) f) <b>Material certification required</b>	UL	04.06.09	12
3	RECEIVING	Receive and Inspect for transit damage <b>Ensure Material certification is attached</b>	CL	04/10/15	14
4	QC	Inspect Level 6 <b>Ensure Material certification comply to Dwg</b>	U	04/10/25	14
5	FINISHING	Chemical conversion coat as per QSI 005 4.1	ML	04.12.14	14
6	STORES	Identify and Stock	U	04.12.14	14
7	EXPEDITING	Close W/O Cost / part <u>802.97</u> <u>54E</u> <u>04/12/20</u> <u>(14)</u> Inspect Level 21	48	04.12.20	14

Rev	Date	Change	Revised By	Approved
A	01.08.17	New Issue	SM	EC

RELEASED

EC 01.08.17

TRF

03.06.05

**Dart Aerospace Ltd**

Work Order:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Manuf / Design Mgr	Approval QC Inspector

NCR		WORK ORDER NON-CONFORMANCE						
DATE	STEP	Description of NC section A	Corrective Action Section B		Sign & Date	Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial					

PAR#: \_\_\_\_\_ Fault Category: \_\_\_\_\_ DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTE:** Date & initial all entries  
H:\Admin-QA\ISO\forms\w\oncb.doc

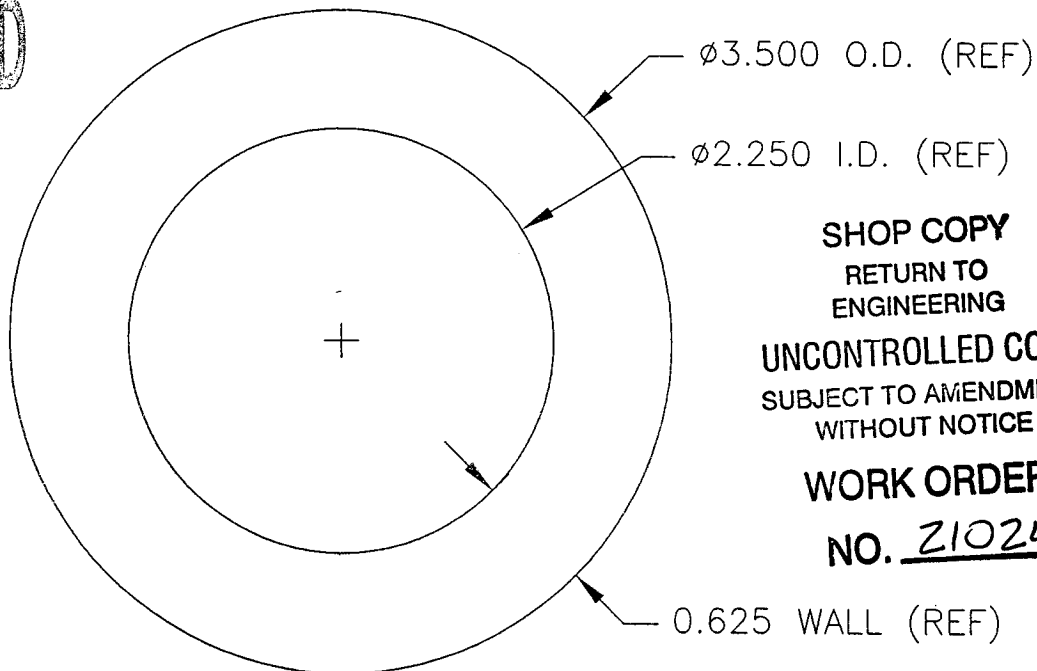
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DESIGN #	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6009	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
01.08.17 #



SHOP COPY  
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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 21024

### NOTES

- 1) D6009-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 129" LONG TUBE: D6009-129

- 2) MATERIAL: 3.500 OD x 0.625 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.063$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.188/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Jun 09, 2004  
09:26 am

Work Order No : 0021024  
Project Name : D6009-129  
Project For : WK436  
Work Order Type : Main  
Main WO Number :  
House Part Number : D6006-129  
Description : Crosstube material  
Manufactured : Yes  
Amount Req'd : 12  
Amount Done : 0  
Start Date : 06-09-04  
Est Finish Date : 08-30-04  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
  
Order Entry No :  
OE Value : 0.00  
  
Est Margin : 0.000%  
Actual Margin : 0.000%  
  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Margin :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00



Uelzener Weg 36 - 59425 Unna

# Abnahmeprüfbescheinigung 3.1 B - EN 10204

## Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

**Kunde:** Dart Aerospace Ltd.**Client:**1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada**Zeugnisnummer:** 490/04**Cert No. / No. du certificat:****Bestellnummer:** 2006521**Order No. / No. de commande****Auftrag:** 9855/3**Our Reference/Notre Reference:****Produkt:****Product / Produit:**

Tubes seamless extruded

**Spezifikation:****Specification:**

AMS QQ-A-200/11E &amp; ASTM B 210

**Werkstoff:****Alloy/Alliage:**

7075

**Zustand:****Temper/État**

T 6511

**Abmessung****Size / Dimension**

3,500"

x 2,250"

x 0,625"

x 129,00"

**Kennzeichnung****Marking/Marquage:**

ALUnna - Cert No. 490/04 - 7075 - T 6511 - Cast No. 78595 - QQA 200/11 E - 3.500" OD X 0.625" Wall - Heat No. 231432 - Lot 9855/3-1 PO. 2006521

**Lieferung****delivered Material / Matériel délivré:**

pcs.

lbs

14

1043

### 1. Chemische Analyse

### Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
78595	0,080	0,223	1,30	0,043	2,43	0,182	5,70	0,036	0,003	0,021	0,001	<0,001	0,005

Elements without indication &lt; 0,01 %

### 2. Mechanische Eigenschaften

### Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Psi	yield (Rp0,2) Psi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	83,520	76,270	11,0		149	231432
2	83,810	76,850	11,0		154	

### Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

### Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

### Results:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

SindermannN

Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09  
Certificate No.: 001959 QM

09.09.2004

Der Werksachverständige



Uelzener Weg 36 - 59425 Unna

# Abnahmeprüfbescheinigung 3.1 B - EN 10204

## Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

**Kunde:** Dart Aerospace Ltd.  
**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:** 493/04  
**Cert No. / No. du certificat:**

**Bestellnummer:** 2006521  
**Order No. / No. de commande:**

**Auftrag:** 9855/2  
**Our Reference/Notre Référence:**

**Produkt:** Tubes seamless extruded

**Product / Produit:**

**Spezifikation:** AMS QQ-A-200/11E & ASTM B 210  
**Specification:**

**Werkstoff:** 7075

**Alloy/Alliage:**

**Zustand:** T 6511

**Temper/État:**

**Abmessung:** 3,250" x 2,220" x 0,515" x 129,00"  
**Size / Dimension:**

**Kennzeichnung:** ALUnna - Cert No. 493/04 - 7075 - T 6511 - Cast No. 78595 - QQA 200/11 E - 3.250" OD X 0.515" Wall - Heat No. 231432 - Lot 9855/2-1 - PO. 2006521  
**Marking/Marquage:**

**Lieferung**

**Delivered Material / Matériel délivré:**

pcs.

lbs

18

1052

### 1. Chemische Analyse

### Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
				1,2		2,1	0,18	5,1						
		0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
78595		0,080	0,223	1,30	0,043	2,43	0,182	5,70	0,036	0,003	0,021	0,001	<0,001	0,005

Elements without indication < 0,01 %

### 2. Mechanische Eigenschaften

### Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Psi	yield (Rp0,2) Psi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min. max.	77,0	66,0				
1	84,680	77,865	11,0		159	231432
2	85,115	78,300	12,0		168	

### Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

SindermannN



Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09  
Certificate No.: 001959 QM

09.09.2004

*[Signature]*  
Der Werksachverständige



Uelzener Weg 36 - 59425 Unna

# Abnahmeprüfbescheinigung 3.1 B - EN 10204

Inspection Certificate 3.1 B - EN 10204 / Certificat de Reception 3.1 B - EN 10204

**Kunde:** Dart Aerospace Ltd.  
**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:**

Cert No.: / No. du certificat:

**Bestellnummer:** 2006521

Order No. / No. de commande

**Auftrag:** 9855/1

Our Reference/Notre Reference:

**Produkt:** Tubes seamless extruded

Product / Produit:

**Spezifikation:** AMS QQ-A-200/11E & ASTM B 210

Specification:

**Werkstoff:** 7075

Alloy/Alliage:

**Zustand:** T 6511

Temper/Etat

**Abmessung:** 2,750" x 2,000" x 0,375" x 128,00"

Size / Dimension

**Kennzeichnung:** ALUnna - Cert No. 408/04 - 7075 - T 6511 - Cast No. 77072 - QQ A - 200/11E - 2.750" OD X 0.375" Wall - Heat No.

Marking/Marquage: 30554 - Lot 9855/1-1 PO. 2006521

**Lieferung**

Delivered Material / Matériel délivré:

pcs.

27

lbs

974

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
77072	0,102	0,207	1,42	0,046	2,39	0,193	5,68	0,044	0,006	0,023	0,001	<0,001	0,007

Elements without indication < 0,01 %

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) Psi	yield (Rp0,2) Psi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	85,550	78,880	10,0		155	30554
2	86,275	79,750	8,0		157	30554

### Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

### Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

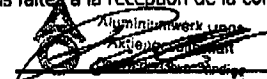
### Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

GschwindU



Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09  
Certificate No.: 001959 QM



Der Werksachverständige

23.07.2004

Customer PO	PO. 2006521
ALUnna ref. no.	9855/2+3
Date:	10.18.04

Dart Aerospace PO. 2006521
D 6006-129 Made in Germany
Dest. Hawkesbury Ont. Canada

**free from live plant pests**

[illegible]



Customer PO	PO. 2006521
ALUnna ref. no.	9855/1
Date:	10.18.04

Ort Aerospace PO. 2006521 D 6005-128  
Made in Germany  
Dest. Hawkesbury Ont. Canada

**free from live plant pests**

[illegible]





Uelzener Weg 36 – 59425 Unna

**Telefax**

**Company:** Dart Aerospace  
**Attention:** Linda Lacelle  
**Phone:**  
**Fax:** 001 613 632 4443

**From:** Nadine Sindermann  
**Dept.:** QA  
**Phone:** +49 2303 206 252  
**Fax:** +49 2303 206 117  
**Email:** sindermann@alu-unna.de  
**Pages:** 4

Unna, 19.10.04

**Re.:** Inspection Certificate**PO :** 2006521**AWU ref. :** 9855/1-3

Dear Customer,

in response to your request for a new/ revised copy of our Inspection certificate, we are pleased to send this attached.

With Best Regards,  
Aluminiumwerk Unna AG

